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<b>13. SUPPLEMENTARY NOTES</b>					
<b>14. ABSTRACT</b> This project aims to carry out secondary analyses of data on risk-protective factors for workplace violence perpetration-victimization in the Army Study to Assess Risk and Resilience in Servicemembers (A-STARRS) and expand knowledge about modifiable risk and protective factors for workplace violence perpetration and victimization. Our analysis of administrative criminal justice data shows that prevalence of founded physical violence, verbal violence, and sexual violence perpetration estimates were 3.2%, 0.5%, and 0.8%, respectively, over the time period 2004-09, with the number of founded incidents 1,155/100KPY (i.e., 1,155 incidents per 100,000 person-years) for physical violence, 172/100KPY for verbal violence, and 284/100KPY for sexual violence. Roughly one-third of instance of physical and sexual violence perpetration are recurrences. We also examined victimization and found lower rates than for perpetration: 594/100KPY for physical violence, 108/100KPY for verbal violence, and 184/100KPY for sexual violence. This means that soldiers have higher rates of perpetration than victimization of these violent acts. Analyses of administrative predictors are just now beginning, but will soon lead to developing risk prediction algorithms to pinpoint soldiers at high risk of violence perpetration and victimization.					
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## INTRODUCTION

The primary objective of this project is to carry out secondary analyses of data on risk-protective factors for workplace violence perpetration-victimization in the Army Study to Assess Risk and Resilience in Servicemembers (A-STARRS), the largest epidemiological study of mental health risk and resilience ever conducted among US Army personnel. Although the primary focus of A-STARRS is suicide, much information also exists on other topics, one of them being violence. Using the A-STARRS dataset, we will estimate the prevalence and predictors of workplace violence perpetration and victimization in order to develop risk prediction tools that can be used by the Army to target Soldiers at high risk of workplace violence perpetration or victimization. A secondary objective is to use the results of these analyses to expand knowledge about modifiable risk and protective factors for workplace violence perpetration and victimization in the Army. The latter information could be of value to the Army once targeting of high-risk groups occurs and preventive interventions are developed or modified.

## BODY

YEAR 1: A significant problem was encountered in YR1 in the delay in obtaining the Army Omnibus DUA, which governs the crime databases. This delay meant that we were unable to begin analysis until the DUA was finalized in September 2013. However, we did have access to the codes and we were able to do conceptual work in organizing the crime codes into categories and writing computer code to streamline variable construction once the data were available.

- A. Specific Aim 1: Merge data on workplace violence across four administrative datasets and generate descriptive epidemiological data on prevalence/ socio-demographics of workplace violence in the Integrated Administrative Data File (IADF). Distinguish violent acts in terms of content and as either investigated but not charged, charged but not founded, or founded.

UPDATE: In conducting work on crime data for Army STARRS, we identified errors in the transferred data and we had a number of communications with the data holders to ask them questions and solve the problem. Correct, updated data for the IADF (now referred to as the Historical Administrative Data System [HADS]) was delivered one month ago, at which time HMS started work to create variables for being a victim or a perpetrator of a violent crime. We generated a coding scheme to classify offense types and identify which offenses should be categorized as workplace violence by reviewing a number of alternative classification schemes. We finally settled on the Bureau of Justice Statistics National Corrections Reporting Program (NCRP) classification system (United States Department of Justice). We categorized offense types into violent and non-violent crimes and also distinguished between offense types related to family vs. crimes not related to family. All crimes that are both violent and not related to family are classed as “workplace violence,” as these are the violent crimes that were committed by Regular Army personnel while on active duty. See Table 1 for the prevalence of victimization and perpetration of violent crime in the HADS data. Prevalence of founded accusations of violence perpetration is 1155.5 per 100,000 person-years for non-familial physical violence, 172.8 for non-familial verbal violence, and 284.4 per 100,000 person-years for sexual violence. The vast majority of the physical violence is simple assault.

Table 1. Rate per 100,000 person years of violence perpetration and victimization in the 2004-2009 Regular Army (n=975,051)

	Non-Familial Physical Violence							Non-Familial Verbal Violence	Non-Familial Sexual Violence	
	Murder/ Homicide/ Manslaughter	Kidnapping	Aggravated Arson	Aggravated Assault	Simple Assault	Robbery	Other Physical Violence			Any Physical Violence
Perpetrators										
Accused	21.0	21.8	2.2	159.6	928.9	15.4	22.0	1,115.5	172.8	284.4
Founded	18.4	19.0	1.9	152.7	903.8	14.0	17.6	1,084.4	164.6	212.6
Judicial Guilty	5.1	0.7	0.3	16.9	6.1	2.5	3.0	30.4	4.9	31.0
NJP (Art. 15) Guilty	0.0	0.2	0.0	1.9	3.4	0.2	2.0	6.8	0.7	18.6
Admin Action Taken	0.4	0.1	0.0	0.4	2.1	0.1	1.3	4.0	0.6	11.1
Any Guilty	5.5	1.0	0.4	19.2	11.7	2.9	6.3	41.3	6.2	60.6
Victim	22.8	7.4	1.5	104.8	453.6	6.6	20.2	594.7	108.1	184.8

**B. Specific Aim 2:** Analyze longitudinal profiles of recurrence of administratively-recorded workplace violence perpetration and victimization in the IADF.

UPDATE: Disaggregation of the above data show that the percent of active duty Regular Army Soldiers in service at any time between 2000-2009 who **ever** during this period were accused of perpetration of non-familial physical, verbal, or sexual violence were 3.2%, 0.5%, and 0.8%, respectively. When we look at **number** of accused perpetrations we find that 17.2% of Soldiers accused of physical violence were accused of multiple occurrences, while the comparable percentages are 9.2% for verbal violence and 20.2% for sexual violence. However, given that multiple offenders sometimes perpetrate a large number of offenses, the percentages of the offenses associated with multiple perpetrations are higher. Roughly one-third of perpetrations of non-familial physical violence are recurrences rather than first offenses. See Table 2 for the distribution of multiple offenses.

Table 2. Distribution of number of violent offenses (accused) in the 2004-2009 Regular Army (n=975,051)

		1	2	3	4	5	6+	Total
<b>Non-Familial Physical Violence</b>	Number of Soldiers	25,861	4,082	861	300	77	40	31,221
	% of Soldiers	2.65	0.42	0.09	0.03	0.01	0.00	3.20
	Number of Acts	25,861	8,164	2,583	1,200	385	289	38,482
	% of Acts	67.20	21.22	6.71	3.12	1.00	0.75	100.00
<b>Non-Familial Verbal Violence</b>	Number of Soldiers	4,749	472	46	14	3	0	5,284
	% of Soldiers	0.49	0.05	0.00	0.00	0.00	0.00	0.54
	Number of Acts	4,749	944	138	56	15	0	5,902
	% of Acts	80.46	15.99	2.34	0.95	0.25	0.00	100.00
<b>Non-Familial Sexual Violence</b>	Number of Soldiers	6,118	1,148	277	81	28	18	7,670
	% of Soldiers	0.63	0.12	0.03	0.01	0.00	0.00	0.79
	Number of Acts	6,118	2,296	831	324	140	129	9,838
	% of Acts	62.19	23.34	8.45	3.29	1.42	1.31	100.00

**C. Specific Aim 3:** Compare IADF violence perpetration-victimization in A-STARRS survey sample.

UPDATE: As mentioned above we identified several errors in the pull of the HADS data. The administrative data for consenting Soldiers had the same problem. The correct data became available only Oct 18. We are starting this analysis now that the data are available, but we do not yet have any results to report.

**D. Specific Aim 4:** Generate descriptive epidemiological data on prevalence/socio-demographic correlates of self-reported workplace violence perpetration- victimization in the A-STARRS surveys.

UPDATE: We have created the variables for self-reported workplace violence perpetration and victimization from the All-Army Survey (AAS), which includes all active duty Regular Army Soldiers not deployed, and the post-deployment phase of the Pre-Post Deployment Survey (PPDS) of three Brigade Combat Teams assessed just before deployment and then again just after returning from deployment. The post-deployment phase of the PPDS reports on experiences in theatre. Both surveys asked respondents to report how often they were verbally violent in the past 30 days (i.e., either yelled, insulted, swore, or threatened someone; had a heated argument; or got into a loud argument in a public place). 16.1% of respondents in the AAS and 12.2% of those in the PPDS reported perpetrating verbal violence over this time period. We also asked about physical violence in a question regarding “physical confrontation” during an argument. A total of 2.6% of AAS respondents and also 2.6% of PPDS respondents reported this kind of experience occurring in the 30 days before interview. Respondents were also asked a question unrestricted by time regarding whether they ever hit people so hard that they get bruises or have to see a doctor. 2.5% of respondents in the AAS and 6.6% of those in the PPDS reported such experiences. Finally, we asked a series of questions about victimization, including questions about experiences in the past 12 months of physical assault and rape. Past year (12 months) physical assault victimization was reported by 1.1% of respondents in the AAS and 1.0% of those in the PPDS, while past year rape victimization was reported by 0.4% of respondents in the AAS and 0.1% of those in the PPDS. See Table 3 for the prevalence of these measures in both the AAS and the PPDS.

**Table 3. Prevalence of self-reported verbal and physical violence in the Army STARRS AAS<sup>1</sup> (n=5,428) and PPDS<sup>1</sup> (n=7,206)**

	AAS		PPDS	
	%	n	%	n
<b>I. Perpetrator of verbal violence</b>				
A. Yell, insult, swear or threaten someone (past 30 days)	14.5	912	11.2	810
B. Heated argument with someone (past 30 days)	7.3	474	5.3	392
C. Loud argument in public (past 30 days)	2.4	164	2.2	155
D. Any perpetrator of verbal violence (past 30 days)	16.1	1,017	12.2	893
<b>II. Perpetrator of physical violence</b>				
A. Physical confrontation during an argument (past 30 days)	2.6	194	2.6	189
B. Sometimes hit people so hard that they get bruises or have to see a doctor	2.5	164	6.6	464
C. Any perpetrator of physical violence	4.7	315	8.6	618
<b>III. Victim of physical or sexual violence, or bullying</b>				
A. Experienced physical assault (during deployment)	2.4	58	2.0	114
B. Experienced physical assault (past 12 months)	1.1	63	1.0	74
C. Victim of sexual assault (during deployment)	1.3	25	0.3	20
C. Sexual assault (during past 12 months)	0.4	10	0.1	12
D. Bullied by unit members (during deployment)	4.6	102	4.5	280
E. Any victim of physical or sexual violence, or bullying (either during deployment or during past 12 months)	5.7	221	7.1	454

- E. Specific Aim 5: Study patterns-predictors of under-reporting IADF workplace violence victimization in the All-Army Survey (AAS) and Pre-Post Deployment Survey (PPDS) samples by comparing self-reported with administratively-recorded victimization. Develop correction procedures and a computer program for Army leadership to use in adjusting for under-reporting in future analyses of Army administrative databases.

UPDATE: As noted above, the crime/offense data file for the survey sample, which holds the data for these analyses, became available only on Oct 18. We are starting this analysis now that the data are available but we do not yet have results to report.

- F. Specific Aim 6: Analyze longitudinal profiles of recurrence of administratively-recorded and self-reported workplace violence in the AAS and PPDS surveys.

UPDATE: As with the last point, the crime/offense data file for the survey sample, which hold the data for these analyses, only became available on Oct 18, which means that we do not yet have results to report, but we're working aggressively on completing these analyses as soon as possible.

Progress summary by quarter:

Quarter 1:	<ul style="list-style-type: none"> <li>Developed coding rules for the creation of administrative variables to describe workplace violence</li> <li>Developed coding rules for the survey measures of workplace violence</li> <li>Updated our literature review on recent studies of risk factors for workplace violence perpetration and victimization</li> </ul>
Quarter 2	<ul style="list-style-type: none"> <li>Secondary IRB approval was provided by USA MPMC HRPO on February 15, 2013.</li> <li>The TMA DUA was finalized on February 26, 2013.</li> <li>Completed coding of self-report workplace violence victimization-perpetration data in the AAS survey data</li> </ul>
Quarter 3	<ul style="list-style-type: none"> <li>Development of beta version SAS code to define administrative dataset outcomes.</li> <li>Implementation of dry run data mining procedures and development of computer programs in the R programming language to implement those procedures.</li> <li>Completed coding of self-reported perpetration and victimization variables in the PPDS.</li> <li>The DMDC DUA was finalized June 3, 2013</li> </ul>
Quarter 4	<ul style="list-style-type: none"> <li>The Army Omnibus DUA was finalized on September 18, 2013.</li> <li>Imputed missing socio-demographic data for variables in IADF, AAS, and PPDS.</li> <li>Created weights for PPDS survey variables.</li> <li>Generated code to distinguish between family-related and non-family related violent crime in order to identify violent workplace offenses.</li> <li>Once the Army Omnibus DUA was approved, work began on developing samples of first and multiple occurrences of violent perpetration that can be used to run predictive models.</li> </ul>

## KEY RESEARCH ACCOMPLISHMENTS

- Once approval was received to work with the survey data we began coding those data on self-reported workplace violence perpetration and victimization. This work is now done. This was our first milestone and we had originally hoped to complete it by the end of 2012, but we were delayed because of not getting approval to work with these data until recently.
- We have generated a coding scheme to classify offenses and identify which offenses should be categorized as workplace violence. First we examined several classification systems and determined the NCRP best matched our purpose as described in Specific Aim 1. We categorized crimes into violent and non-violent crimes and also distinguished between crimes related to family vs. crimes not related to family. All crimes that are both violent and not related to family are classed as “workplace violence,” as these violent crimes were committed by Regular Army personnel while on active duty. In conducting work on crime data for Army STARRS, we identified errors in the transferred data and we had several communications with the data holders to ask them questions and solve the problem. Corrected, updated data for the IADF (now called HADS) was delivered about a month ago and HMS started work right away to create variables for being both a victim and offender of a violent crime.
- HMS analysts are in the process of generating samples to analyze longitudinal profiles of recurrence of administratively-recorded workplace violence perpetration and victimization in the IADF. We will be sampling first offenses and then among those with one offense, we will generate a sample for predicting a second offense, then among those with two offenses we will generate a sample to predict a third offense, and so on. Once these samples have been created we will look at predictors for a first offense and separately for predictors of multiple offenses.
- The crime/offense data file for the survey sample, which hold the data for these analyses, only became available on Oct 18. We have begun analyses on IADF violence perpetration-victimization, patterns-predictors of under-reporting IADF workplace violence victimization in the All-Army Survey (AAS) and Pre-Post Deployment Survey (PPDS) samples, and longitudinal profiles of recurrence of administratively-recorded and self-reported workplace violence in the AAS and PPDS surveys now that the data are available. Initial results are described above; please see Appendix Tables 1, 2, and 3.
- Due to the delayed arrival of the actual data, work on the socio-demographic correlates of self-reported workplace violence perpetration- victimization in the A-STARRS surveys is still in progress.

## REPORTABLE OUTCOMES

- TMA DUA finalized February 26, 2013
- DMDC DUA finalized on June 3, 2013
- Army Omnibus DUA finalized on September 18, 2013
- Development of comprehensive crime database that includes all reported offenses committed or experienced by Army Soldiers in all Regular Army Soldiers from 2004-2009, and development of self-report instances of victimization and perpetration among Soldiers who participated in Army STARRS AAS and PPDS



## **CONCLUSION**

We received final approval for accessing the administrative datasets containing Army criminal justice data for the purpose of this project on September 18, 2013. We first submitted the request in early September, 2012 and we have been in back and forth communications with the ODUSA since that time trying to gain approval. Due to the delay in obtaining this critical DUA, our work on this project for much of the year has been limited to developing code, determining the appropriate classification scheme, and classifying offenses. However, now that we have access to the data, we are in the process of aggressively carrying out the proposed analyses. The first step in our analysis of these administrative data was to examine basic distributions. Our next step was to refine our measures of violent crime, as many of the violent crimes in the Army are family-related (e.g., child and spouse abuse). We only became aware of this once we had a chance to look at distributions. We consequently separated family from other violent crime. Now, given that the vast majority of violent crimes in the Army are first offenses, we are calculating speed-of-onset curves to examine when it is in the Army career that these crimes first occur, including information on the deployment history and status of offenders at the time of their first offense. This information will help us develop some initial thoughts about potentially important structural predictors of perpetration. We will then develop predictive models to determine the extent to which data mining can help us develop risk evaluation formulas to determine which Soldiers are at high risk of violent crime perpetration. Parallel models will also be developed for risk of violent crime victimization. It might be that separate models will also be developed for different phases of the Army career if it turns out that we find important differences by career phase.

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